

IN THE CLAIMS:

The following listing of the claims replaces all earlier listings and all earlier versions.

Claim 1. (previously presented): A method of generating frequency component image data representative of image information of a plurality of different spatial frequencies of an image of at least part of a subject from a predefined view, the method comprising:

receiving a plurality of images comprising image data representative of a subject from a plurality of view points;

determining from said plurality of received images the relative positions of the viewpoints of the subject represented by said images;

determining from said plurality of images and said determined positions, model data representative of the surface of said subject;

for each of said plurality of received images, determining frequency component image data representative of image information of a plurality of different spatial frequencies within said received images and determining projections of said frequency component image data projected to said predefined view utilizing said position data and said model data of the surface of said subject; and

for each of said plurality of different spatial frequencies, utilizing said projections of frequency component image data to generate frequency component image data representative of spatial frequency information of an image of at least part of said subject from said predefined view.

Claim 2. (previously presented): A method in accordance with claim 1, wherein the determination of frequency component image data representative of a lower spatial frequency is determined by performing a blurring and sub-sampling operation utilizing said received image data.

Claim 3. (previously presented): A method in accordance with claim 2, wherein the determination of frequency component image data representative of a higher frequency is determined by performing a differencing operation utilizing said lower frequency component image data and said received image data.

Claim 4. (canceled).

Claim 5. (previously presented): A method in accordance with claim 1, wherein said determination of position data indicative of the relative position of said plurality of viewpoints for said received images comprises matching features within said images to determine relative positions and orientations of said viewpoints.

Claim 6. (previously presented): A method in accordance with claim 1, wherein said generation of model data comprises for each of said plurality of received images:

determining the portions of an image corresponding to the subject; and
generating model data utilizing a determination of the perimeters of said portion of said image and position data indicative of the viewpoint for said image.

Claim 7. (previously presented): A method in accordance with claim 1, wherein said generation of frequency component image data comprises for each spatial frequency for which frequency component image data is to be generated:

utilizing each portion of said projections of frequency component image data to determine frequency component image data representative of spatial frequency information of said spatial frequency for corresponding portions of said image.

Claim 8. (original): A method in accordance with claim 7, wherein said generation of frequency component image data for different spatial frequencies for an image are generated from said corresponding portions of projections of frequency component image data in different ways for different spatial frequencies.

Claim 9. (currently amended): A method of generating frequency component image data representative of image information of a plurality of different spatial

frequencies of an image of at least part of a subject from a predefined view, the method comprising:

receiving a plurality of images comprising image data representative of a subject from a plurality of view points;

determining, for each of said plurality of received images, visibility data indicative of the relative visibility of portions of the surface of said subject from said viewpoints and associating portions of ~~said~~ projections of frequency component image data, with said visibility data;

utilizing said visibility data associated with portions of said projections to determine frequency component image data representative of frequency image information of an image of said subject from said predefined views; and

for each spatial frequency for which frequency component image data is generated, utilizing each portion of said projections of frequency component image data to determine frequency component image data representative of spatial frequency information of said spatial frequency for corresponding portions of said image.

Claim 10. (previously presented): A method in accordance with claim 9, wherein said generation of frequency component image data for at least one of said different spatial frequencies is generated by calculating for each portion of said image data for said spatial frequency a weighted average of corresponding portions of projections of

frequency component image data for said portion of said image, weighted by said visibility data associated with said portions of image data.

Claim 11. (previously presented): A method in accordance with claim 9, wherein said generation of frequency component image data for at least one of said different spatial frequencies is generated by selecting for each pixel of said image data for said spatial frequency said corresponding portions of projections of frequency component image data associated with visibility data indicative of the highest visibility.

Claim 12. (previously presented): A method of generating image data representative of an image of a subject from a predefined viewpoint, the method of comprising:

generating frequency component image data representative of image information of a plurality of different spatial frequencies of an image of a subject from said predefined view in accordance with a method of claim 1; and

generating image data representative said image of said subject utilizing said frequency component image data.

Claim 13. (previously presented): A method in accordance with claim 12, wherein said generation of image data comprises for each portion of said image

determining the sum of frequency component image data for said different spatial frequencies.

Claim 14. (previously presented): A method in accordance with claim 12, further comprising outputting said generated image data.

Claim 15. (previously presented): A method of generating texture map data for texture rendering a model of a subject comprising:

generating a plurality of images of a subject from a plurality of predefined views in accordance with the method of claim 12.

Claim 16. (original): A method in accordance with claim 15, wherein said plurality of predefined views comprise views of a subject from viewpoints indicative of views from the surface of a cuboid bounding said subject.

Claim 17. (currently amended): A method of generating image data of an image of a subject from a selected viewpoint, the method comprising:

receiving a plurality of images comprising image data representative of a subject from a plurality of view points;

for each of said plurality of received images, determining frequency component image data representative of image information of a plurality of different spatial

frequencies within said received images and determining projections of said frequency component image data projected to ~~said~~ a predefined view;

for each of said plurality of different spatial frequencies, utilizing said projections of frequency component image data to generate frequency component image data representative of spatial frequency information of an image of at least part of said subject from said predefined view;

generating texture map data utilizing said frequency component image data;

determining the projection of a three dimensional model defined by said model data as perceived from a selected viewpoint; and

texture rendering said projection of said model utilizing ~~data~~ said texture map data.

Claim 18. (previously presented): A method in accordance with claim 17, further comprising outputting said generated image data of a subject from said selected viewpoint.

Claim 19. (previously presented): Apparatus for generating frequency component image data representative of image information of a plurality of different spatial frequencies of an image of at least part of a subject from a predefined view, the apparatus comprising:

a receiver operable to receive a plurality of images comprising image data representative of a subject from a plurality of view points;

a position determination unit operable to determine from a plurality of received images the relative positions of the viewpoints of a subject represented in said images;

a modeling unit operable to determine from a plurality of images and data indicative of the viewpoints of a subject represented in said images, model data representative of the surface of said subject;

a determination unit operable to determine for each of a plurality of received images, frequency component image data representative of image information of a plurality of different spatial frequencies within said images received by said receiver;

a projection generation unit operable to determine projections of frequency component image data determined by said determination unit to a predefined viewpoint utilizing position data determined by said position determination unit and model data of a surface of a subject determined by said modeling unit; and

an image generator operable to utilize projections of frequency component image data determined by said projection generation unit for each of said plurality of different spatial frequencies, to generate frequency component image data representative of spatial frequency information of an image of at least part of said subject from said predefined view.

Claim 20. (previously presented): Apparatus in accordance with claim 19, wherein said determination unit is operable to determine frequency component image data representative of a lower spatial frequency by performing a blurring and sub-sampling operation utilizing said image data received by said receiver.

Claim 21. (previously presented): Apparatus in accordance with claim 20, wherein said determination unit is arranged to determine frequency component image data representative of a higher frequency by performing a differencing operation utilizing a said lower frequency component image data and a said image data received by said receiver.

Claim 22. (canceled).

Claim 23. (previously presented): Apparatus in accordance with claim 19, wherein said position determination unit is operable to determine position data indicative of the relative positions of a plurality of viewpoints for said received images by matching features within said images to determine relative positions and orientations of the viewpoints.

Claim 24. (previously presented): Apparatus in accordance with claim 19, wherein said modeling unit is arranged to generate model data by:

determining the portions of an image corresponding to the subject; and

generating model data utilizing a determination of the perimeters of said portion of said image and position data indicative of the viewpoint for said image.

Claim 25. (previously presented): Apparatus in accordance with claim 19, wherein said image generator is arranged to generate frequency component image data for different spatial frequencies by utilizing each portion of said projections of frequency component image data for a frequency to determine frequency component image data representative of spatial frequency information of said spatial frequency for corresponding portions of said image.

Claim 26. (original): Apparatus in accordance with claim 25, wherein said image generator is arranged to generate frequency component image data for different spatial frequencies for an image from said corresponding portions of projections of frequency component image data in different ways for different spatial frequencies.

Claim 27. (previously presented): Apparatus for generating frequency component image data representative of image information of a plurality of different spatial frequencies of an image of at least part of a subject from a predefined view, the apparatus comprising:

a receiver operable to receive a plurality of images comprising image data representative of a subject from a plurality of view points;

a determination unit operable to determine for each of a plurality of received images, frequency component image data representative of image information of a plurality of different spatial frequencies within images received by said receiver and determine projections of said frequency component image data projected to a predefined view;

a visibility determination unit operable to determine visibility data indicative of the relative visibility of portions of the surface of a subject from viewpoints;

an association unit operable to associate portions of projections of frequency component image data determined by said determination unit with visibility data determined by said visibility determination unit; and

a processor operable to utilize visibility data associated with portions of projections by said association unit to determine frequency component image data representative of frequency image information of an image of a subject from a predefined view.

Claim 28. (previously presented): Apparatus in accordance with claim 27, wherein said processor is arranged to generate frequency component image data by calculating for each portion of image data for a spatial frequency a weighted average of corresponding portions of projections of frequency component image data for said portion of said image, weighted by the visibility data associated with said portions of image data.

Claim 29. (previously presented): Apparatus in accordance with claim 27, wherein said processor is arranged to generate frequency component image data by selecting for each pixel of image data for a said spatial frequency the corresponding portions of projections of frequency component image data associated with visibility data indicative of the highest visibility.

Claim 30. (previously presented): Apparatus for generating image data representative of an image of a subject from a predefined viewpoint, the apparatus comprising:

frequency component generator operable to generate frequency component image data representative of image information of a plurality of different spatial frequencies of an image of a subject from said predefined view comprising apparatus in accordance with claim 19; and

a combining unit operable to generate image data representative of said image of said subject utilizing said frequency component image data.

Claim 31. (previously presented): Apparatus in accordance with claim 30, wherein said combining unit is arranged to determine for each portion of said image a determined the sum of frequency component image data for said different spatial frequencies.

Claim 32. (previously presented): Apparatus in accordance with claim 30, further comprising an output unit operable to output said generated image data.

Claim 33. (previously presented): Apparatus for generating image data of a subject from selected viewpoint comprising:

a map generating unit for generating texture map data for texture rendering a model of said subject, comprising apparatus in accordance with claim 30;

a projection unit operable to determine the projection of three dimensional computer model as perceived from said selected viewpoint; and

a texture renderer operable to texture render said projection utilizing texture map data generated by said map generating unit.

Claims 34. and 35. (canceled).

Claim 36. (previously presented): A recording medium for storing computer implementable process steps for generating within a programmable computer, apparatus in accordance with claim 19.

Claim 37. (previously presented): A recording medium for storing computer implementable process steps for causing a programmable computer to perform a method in accordance with claim 1.

Claim 38. (previously presented): A recording medium in accordance with claim 37, comprising a computer disc.

Claim 39. (previously presented): A computer disc in accordance with claim 38, comprising an optical, magneto-optical or magnetic disc.

Claim 40. (original): A recording medium in accordance with claim 37, comprising an electrical signal transferred via the Internet.

Claims 41 - 57. (canceled).